

Ninth and Tenth Decades of the Third Century of New Exotic Cellular Plants, by Dr. Montagne. The portion of these valuable papers in this Number is occupied by descriptions of the Lichens of Guiana.

WORKS JUST PUBLISHED.

Arcana Entomologica; or, Illustrations of New, Rare, and Interesting Insects. By J. O. Westwood, F.L.S., Sec. Ent. Soc. London, &c.

The first volume, containing 48 coloured plates, of this work, which was established with the view of describing and figuring some of the many interesting and splendid novelties with which our entomological collections have, within the last few years, been so greatly enriched, is now completed.

The plates comprise 176 coloured figures, of which nearly 160 are representatives of insects now for the first time given to the scientific world, or of which no previous figures existed. The work is to be continued in each alternate month.

Manual of British Botany. By Charles C. Babington, M.A., F.L.S., F.G.S. &c.

Containing generic and specific characters of British plants, in one volume, 12mo, as a travelling companion.

PROCEEDINGS OF LEARNED SOCIETIES.

LINNÆAN SOCIETY.

December 20, 1842.—E. Forster, Esq., V.P., in the Chair.

A. H. Hassall, Esq., exhibited an Apple in which decay had been artificially induced by inoculating it with decayed matter from another apple containing filaments of Entophytal *Fungi*.

“Some further Observations on the Nature of the *Ergot* of Grasses.” By Edwin John Quekett, Esq., F.L.S.

This paper contains the results of experiments made by the author with the view of determining the mode in which the sporidia of the fungus which he regards as the cause of *Ergot* are introduced into the infected grass.

In March 1840 twelve healthy grains of rye, of wheat and of barley were placed in a shallow glass vessel containing a sufficient quantity of distilled water to moisten them, and covered with a glass shade. When germination commenced an ergot of wheat of the preceding year was immersed in the water, the sporidia on its surface were detached, and the ergot itself was then removed. The same experiment was performed with sporidia obtained from an ergot of *Elymus sabulosus*. Several days afterwards, when the leaves had attained a length of three or four inches, the young plants were conveyed into the country and planted side by side in a garden. At the period of harvest there remained alive only four plants of the rye (one of which had been infected from the ergot of *Elymus*, and the

remaining three from that of wheat), three of the barley and four of the wheat. Of the rye scarcely a single ear produced healthy grains, the paleæ being generally quite empty; but nine of the ears contained ergots, some furnishing only a single specimen, and others as many as six. The ears of the barley were filled with healthy grains, and only one apparently diseased grain was detected; while in the wheat the ears were full and without disease.

As in these experiments no grains from the same sample were sown which had not been subjected to the influence of the sporidia of the fungus, Mr. Quekett made in the following autumn another experiment with the view of supplying this deficiency. Twelve grains of rye, of wheat and of barley were again made to germinate under similar circumstances to the last, and the sporidia obtained from the surface of one of the ergots of rye produced in the first experiment were diffused in the water in which they grew. These were planted in October on the same estate, but not within half a mile of the former spot; and twelve healthy grains of each kind which had been carefully kept apart from the others were planted in the same locality. Very few of the plants arrived at maturity, and in August last there remained of the infected plants only two of rye, two of wheat, and one of barley; and of the uninfected plants one of each kind. On each of the plants of rye which had been subjected to the influence of the sporidia an ergot was discovered, and the ears as before were almost entirely devoid of healthy grains; while the plants of wheat and barley subjected to the same influence produced perfect ears and healthy grains. The three plants of rye, wheat and barley planted at the same time without exposure to the sporidia of the fungus presented no unhealthy appearance.

Mr. Quekett argues that all the grains of rye subjected during germination to the influence of the sporidia of the fungus in both sets of experiments having produced plants infected with ergot, while the plants derived from grains not so subjected escaped disease, a convincing proof is afforded that their infection could not have been the effect of chance, but must have resulted from the artificial introduction of the sporidia; and that the infection of the rye only, while the wheat and barley escaped, is to be attributed to the greater susceptibility of the rye to infection, as proved by the much greater frequency of the production of ergots in that species of grain.

January 17, 1843.—E. Forster, Esq., V.P., in the Chair.

William Taylor, Esq., F.L.S., presented specimens of the seeds, oil, and oil-cake of *Camelina sativa*, Crantz, accompanied by some observations strongly recommending its cultivation in preference to that of flax for the production of oil.

February 7.—E. Forster, Esq., V.P., in the Chair.

The Rev. William Hincks, F.L.S., exhibited a specimen believed to belong to *Neottia gemmipara*, Smith. The specimen, which was from the collection of Dr. Wood of Cork, was obtained by him from

very near the original locality named by Mr. Drummond. Mr. Hincks stated that he had taken some pains in comparing the specimen, not only with the description, but also with the original sketch made by Mr. James Drummond on a blank leaf of the pocket-book in which he noted down the occurrences of the tour upon which he made the discovery of this curious plant. The specimen now exhibited was marked by Dr. Wood when fresh, and he had no doubt of its identity; and the result of Mr. Hincks's examination was a confirmation of this opinion.

Read an "Essay on the Distribution, Vitality, Structure, Modes of Growth and Reproduction, and Uses of the Freshwater *Confervæ*." By Arthur Hill Hassall.

The principal part of Mr. Hassall's observations on the growth of *Confervæ* have been already published in various Numbers of the 'Annals and Magazine of Natural History.'

At the period of their publication he was not aware of the observations of M. Morren, M. Dumortier and M. Mohl on the growth of *Confervæ* by the subdivision of their cells; but he states that his views of the mode in which this subdivision is effected differ considerably from those of M. Morren. He does not believe that when the endochrome of a cell has become separated into two masses, leaving a transparent space between them, this space is occupied by a formative intercellular matter such as M. Morren describes. On the contrary, he states that the first indication of the partitions which are to divide the parent cell into two consists of a solution of the continuity of a portion of the periphery of the cell, the divided edges of which become inflected and gradually approach the centre, where they coalesce.

March 7.—The Lord Bishop of Norwich, President, in the Chair.

J. O. Westwood, Esq., F.L.S., presented specimens of the aerial processes of the roots of *Sonneratia acida*, L., sent by Mr. Templeton from Ceylon, and described by him as affording a wood of an extremely light and close texture, admirably adapted for lining insect-boxes, on account of the facility with which it admits, and the tenacity with which it retains, the finest pins.

March 21.—The Lord Bishop of Norwich, President, in the Chair.

J. Janson, Esq., F.L.S., exhibited living flowering plants of the "hungry rice" of Sierra Leone, *Paspalum exile*, Kipp., described at p. 235, raised from seeds brought from Sierra Leone by Robert Clarke, Esq.

Read a memoir "On *Pectinura*, a new genus of *Ophiuridæ*, and on the species of *Ophiura* inhabiting the Eastern Mediterranean." By Edward Forbes, Esq., F.L.S., Professor of Botany in King's College, London.

Professor Forbes states that in his late researches in the Ægean Sea he found ten species of Starfishes of the order *Ophiuridæ*, several of which are undescribed. In the present memoir he confines him-

self to those belonging to the genus *Ophiura*, and to an allied genus, hitherto uncharacterized, to which he gives the name of *Pectinura*. This genus is founded on a small starfish brought up by the dredge from the depth of 100 fathoms on the coast of Lycia, and is characterized as follows :—

PECTINURA.

Corpus orbiculare, squamosum, granulosum, ad peripheriam radiatum; radiis simplicibus, squamosis, in corporis discum subprolongatis; squamis radiatorum lateralibus adpressis, in marginibus superioribus spiniferis; ossiculis ovarialibus binis in corporis lobos non productis.

P. VESTITA, disco orbiculari, radiis convexiusculis; squamis superioribus rotundatis: lateralibus 8 spiniferis.—Lat. disci $\frac{1}{8}$ unc.

Professor Forbes states that he should scarcely have ventured to establish a genus on the single specimen of this species which he possesses, and which is somewhat imperfect in the rays, had he not had an opportunity of examining a large foreign species, which shows it to be a well-marked genus, having a rather closer affinity with *Ophiura* than with *Ophiocoma*. It differs from the former in having the disc clothed with granules, in the absence of the pectinated scales embracing the origins of the rays, and in the ovarian plates (not soldered into one as in *Ophiura*) not encroaching on the body; and from *Ophiocoma* by the lateral ray-plates overlapping each other and the posterior ray-plates as in *Ophiura*, and instead of having the spines on a transverse ridge or keel having them articulated to their superior margins, so that when the animal is dead they lie close to the rays and do not bristle out as in *Ophiocoma*.

Of *Ophiura* Professor Forbes found three species, *O. texturata*, *O. albida*, and a new species to which he gives the name of *O. abyssicola*, on account of its being found in deeper water than any recorded starfish, at the depth namely of from 150 to 200 fathoms. A comparison of the characters of this new species with those of its described allies, has enabled him to revise the characters of the genus *Ophiura* as follows :—

OPHIURA, Lam., Agass.

Corpus orbiculare, squamosum, læve, ad peripheriam radiatum; radiis simplicibus, squamosis, in corporis discum prolongatis, ad origines squamis pectinatis adpressis; squamis radiatorum lateralibus adpressis, in marginibus superioribus spiniferis; ossiculis marginis ovarialibus simplicibus, in corporis lobos productis.

The following are the specific characters of the *Ægean* species :—

O. texturata, Lam. Squamis pectinatis ad radiatorum origines plus quam 20-dentatis, ossiculis ovarialibus lyratis, radiis carinatis; squamis superioribus transversè oblongis: lateralibus 7 spiniferis.

O. albida, Forbes. Squamis pectinatis ad radiatorum origines 16-dentatis, ossiculis ovarialibus scutatis, radiis convexis; squamis superioribus triangularibus: lateralibus 4 vel 5 spiniferis.

O. ABYSSICOLA, squamis pectinatis ad radiatorum origines binis 5—9-dentatis, ossiculis ovarialibus pentagonis, radiis carinatis; squamis superioribus quadratis: lateralibus 3 vel 4 spiniferis.—Lat. disci $\frac{2}{10}$ unc.

ENTOMOLOGICAL SOCIETY.

July 4, 1842.—W. W. Saunders, Esq., F.L.S., President, in the Chair.

Mr. F. Smith exhibited a number of British *Vespidæ*, *Crabronidæ* and *Apidæ*, accompanied by specimens of their nests, &c.

Mr. Westwood exhibited a specimen of a new *Goliath Beetle* from the East Indies (*Cyphonocephalus smaragdulus*, W., Arc. Ent.), and some rare Papilionideous and Cimicideous insects from the collection of the Bristol Institution, communicated by G. H. K. Thwaites, Esq. Likewise a new and singular genus of *Coleoptera*, but of doubtful family, from the collection of M. Dupont. Likewise *Orchestes Quercus* and its parasites reared from mined leaves of oak from Weybridge.

Mr. S. Stevens exhibited a box of British moths taken in June in the Hammersmith marshes, including the following rare species: *Leucania obsoleta* and *Vectis*, *Nudaria senex*, *Melia sericea*, *Chilo giganteus* and *phragmatellus*; &c.

The Rev. F. W. Hope exhibited a number of new and rare *Coleoptera* from Cape Palmas.

Mr. W. W. Saunders exhibited numerous gall-like nidi of an insect upon a twig of *Leptospermum* from New Holland. Likewise specimens of *Triphæna pronuba* stuck upon thorns by the butcher-bird, remarking that this species of moth was the only one selected by the bird at the time they were observed. Mr. Hope however stated that he had occasionally observed *Libellulæ* and *Geotrupides* also similarly affixed.

Mr. J. F. Stephens exhibited a specimen of *Calosoma sycophanta* recently captured at Herne Bay, Kent.

Mrs. North of East Acton exhibited a minute wasp's nest found in the interior of a hive of bees, which had in consequence been deserted by the inhabitants.

Mr. Inghen exhibited a fossil wing of a large species of *Limnobia* obtained by the Rev. P. B. Brodie from the lias near Gloucester, and similar to some found in the Wealden strata of Wiltshire.

Mr. Raddon exhibited a specimen of *Goliathus Drurii*, Westw., taken at Frisa, on the west coast of Africa, 5° 20" lat. N. and 6° west long.: its food was stated by the natives to be the common bamboo canes, in which it lodges for a considerable time, entering at the but and ascending nearly eight feet, when it is generally found in the state of a grub.

Mr. Hope read several extracts from a letter received from Mr. Savage at Cape Palmas, by whom a considerable number of *Goliath Beetles* (*G. Drurii*, *Cacicus*, *princeps* and *torquatus*) and other rare insects had been transmitted to Mr. Hope.

A paper by S. S. Saunders, Esq., Consul of Albania, containing further observations on *Mygale Ionica*, was read (since published in the Transactions of the Society).

August 1.—The President in the Chair.

Mr. W. W. Saunders exhibited various interesting *Lepidoptera* from Van Diemen's Land.

Mr. Westwood noticed the peculiar construction of the scutellum of the large species of *Goliath Beetles*, which does not allow the elytra to be elevated beyond a very little distance above the back.

Mr. F. Smith exhibited a specimen of *Macropis labiata* ♂, taken by Mr. S. Stevens during the excursion to Weybridge in June; also specimens of the male, female and two kinds of neuters of *Formica sanguinea*.

Mr. S. Stevens exhibited some Egyptian beans greatly eaten by *Anobium paniceum*, and Mr. Saunders stated that a cargo of the Pady or Divi Divi, a South American legume, had been very greatly injured by a species of *Bruchus*.

Mr. Ingpen exhibited some radishes from Battersea fields, the stems of which were greatly swollen in parts, probably resulting from the punctures of some insect.

Mr. Westwood exhibited some *Dipterous larvæ* which feed on the heads of lettuce seed. He also read a memoir entitled "Descriptions of some new Exotic *Reduviidæ* of large size:"—

Ectrichodia imperialis, W. *E. purpurascens, hemelytris atris, abdominis marginibus detectis fulvo purpureoque alternatim maculatis; antennis 6-articulatis, radiculâ basali haud computatâ.*—Long. corp. unc. $1\frac{3}{4}$.—Hab. Cape Palmas, Mr. Savage. Mus. Hope.

Platymeris ducalis, W. *Nigra nitida, hemelytris maculâ laterali, femoribus fasciâ latâ subapicali, abdominis maculis lateralibus rufis, pronoto scutelloque spinigeris.*—Long. corp. unc. $1\frac{1}{8}$.—Hab. Cape Palmas, Mr. Savage. Mus. Hope.

Ectinoderus, W. Subg. nov. *Pronotum maximum anticè suprâ basin pedum anticorum dilatatum in medio transversè impressum, posticèque in lobos duos suprâ basin hemelytrorum protensum. Pedes antiqui valdè elongati, femoribus crassis tibiisque rectis. Antennæ 4-articulatæ, articulo 1^{mo} longo, tribus ultimis sensim brevioribus et tenuioribus (inter art. 1 et 2 et 3 articuli minimi apparent). Abdomen subrotundum depressum lateribus detectis.*

Ectinoderus longimanus, W. *Obscurè luteus, capite antennis et hemelytrorum membranâ nigris, femoribus fasciâ mediâ apiceque tibiisque anticis (nisi ad basin) nigricantibus hemelytrorum corio et abdominis lateribus luteo nigroque variis.*—Long. corp. unc. $1\frac{1}{3}$.—Hab. Singapore? Mus. Westwood.

Obs. Mr. Cuming has brought another species of this subgenus from the Philippine Islands.

ZOOLOGICAL SOCIETY.

June 28, 1842.—William Yarrell, Esq., Vice-President, in the Chair.

A paper by G. B. Sowerby, Esq., containing descriptions of new species of Shells belonging to the genus *Cyclostoma*, was read.

The species described in this paper were collected in the Philippine Islands by H. Cuming, Esq., by whom they were exhibited.

CYCLOSTOMA ACUTIMARGINATUM.

Cycl. testâ suborbiculari, conicâ, tenui, lævi, subpellucidâ, badiâ, albido-marmoratâ, spirâ subacuminatâ, submammillari, anfracti-

bus quatuor, raptim crescentibus, suprâ infrâque rotundatis, margine carinato, acuto, prope suturam marginemque coloribus articulatis; aperturâ magnâ, orbiculari, peritremate reflexo, albo, incrassato, prope ultimum anfractum subinterrupto, supernè productiore, minimè reflexo; umbilico mediocri, profundo. Long. 0·9; lat. 1·1 poll. Operculo corneo, multispirali.

Hab. supra foliis Palmarum apud Catbalongan Insulæ Laman Philippinarum.

An elegant species, remarkable for the sharpness of its edge (in which it resembles a Carocolla), as well as for the beautiful arrangement of the colouring.

CYCLOSTOMA LUZONICUM.

Icon. Sowerby, Species Conchyliorum, Pars 2^{da}, Cyclostoma, f. 133.

Cycl. testâ suborbiculari, albâ, castaneo-variegatâ, spirâ depressiusculâ, obtusâ; anfractibus quatuor ad quinque, rotundatis, concinnè spiraliter striatis, fasciâ albâ infrâ suturam fusco-articulatâ; suturâ profundâ; aperturâ circulari, peritremate crasso, reflexo; umbilico maximo. Long. 0·7; lat. 1·3 poll. Operculum corneum, tenue, anfractuum marginibus lamellosis.

The first specimens of this species were brought from Luçon by J. K. Smith, Esq. Mr. Cuming has collected the following varieties, viz:—

a. Shell variegated, with a brown and white articulated band close to the front of the suture, median band variously mottled. Found under decayed leaves on Mount Isarog in the province of South Camarinas, island of Luçon.

b. Shell variegated, upper or posterior part of the two last volutions with four or five rather prominent elevated striæ. Found under decayed leaves in the island of Masbate.

c. Upper part of the volutions of a pale colour, with a brown and white articulated band next to the suture; median line articulated with brown and white, in front of which the shell is dark brown, becoming paler toward the umbilicus. Found under decayed leaves at St. Jaun in the province of Cagayan, island of Luçon.

d. Shell dark chestnut-brown, articulated with white in front of the suture; median line brown and white mottled; umbilicus and peritreme white. Found under decayed wood at Calauang in the province of Laguna, island of Luçon.

e. Shell brownish, with an articulated band next to the suture, and two median bands, the posterior of which is white and the anterior dark brown; spire more elevated than in the former varieties. Found in earth under decayed leaves at Sinit in the province of South Ilocos, island of Luçon.

f. Shell rather smaller and with a more elevated spire than in varieties *a.* to *d.*, variously mottled. Found under decayed leaves in the woods at Dolores in the province of Pampanga, island of Luçon.

g. Shell rather paler coloured than most of the varieties, but ha-

ving the inside of the aperture of an orange-brown. Found under decayed leaves on Mount Isarog, with var. *a*.

h. Similar to var. *e*, but altogether paler, and from the same locality.

CYCLOSTOMA CANALIFERUM.

Icon. Sowerby, Species Conchyliorum, Pars 2^{da}, Cyclostoma, f. 195, 196.

Cycl. testâ orbiculari, subdepressa, crassiusculâ, albicante, brunneo-marmoratâ, spirâ depressâ, obtusâ; anfractibus quatuor, rotundatis, spiraliter striatis et supernè cariniferis, prope suturam brunneo albidoque articulatis et cingulo centrali brunneo ornatis; suturâ canaliculatâ, margine canalîs elevato; aperturâ circulari, peritremate incrassato, reflexo, umbilicûm patulum versus lamelloso-patente. Long. 0·8; lat. 1·4 poll. Operculum corneum, anfractuum margine lamellari, levatiusculo.

This species bears a general resemblance to the last; it may be distinguished by the flexuose lamella proceeding from the peritreme and overlying the umbilicus, so as nearly to cover it when adult; and also by the narrow channel at the suture. I received the first specimens of this shell from J. K. Smith, Esq. Mr. Cuming has collected two different varieties.

a. Shell depressed, pale in colour, J. K. Smith, Esq.

b. Shell with a more prominent spire and much darker colours. Found under decayed leaves on the island of Burias, H. Cuming, Esq.

c. Shell with the spire prominent as the last; of a rich dark brown, with a white median line and angular flashes of white on the upper side. Found under decayed leaves in the province of Tayabas, island of Luçon, H. Cuming, Esq.

CYCLOSTOMA VALIDUM.

Cycl. testâ orbiculari, crassiusculâ, pallidâ, brunneo-variegatâ, spirâ elevatiusculâ, anfractibus quinque rotundatis, spiraliter striatis, et nonnunquam obtusè quatuor- ad quinque-carinatis; suturâ distinctâ; aperturâ circulari, peritremate incrassato, reflexo, umbilicûm versus patente; umbilico mediocri. Long. 1·5; lat. 1·8 poll. Operculum corneum, tenuiculum, margine anfractuum lamellari.

The young shell of this species appears to have been of comparatively large size at its first development from the egg, the edge of its aperture being usually distinguished by a broad and dark brown oblique band at about the middle of the third volution from the apex. Mr. Cuming has brought several varieties, as follows:—

a. This is the largest and coarsest variety, and its colours are the least brilliant; the lower part, near to the aperture, appears to be constantly worn away, probably from age; the peritreme also is extended far beyond its first formed edge. It is found on the leaves of trees at Tanauan, in the island of Leyte.

b. Shell of a dark brown, with sometimes angular flashes of nearly white over the upper part of the shell; the median edge is obtusely

keeled. It is found under decayed leaves in the province of Taya-bas, island of Luçon.

c. Shell of a light brown colour, variously mottled with very dark brown. Found under decayed leaves in dense woods at Catbalonga, and at Basay, in the island of Samar.

d. Smaller than the last, and generally paler in colour, with less of the dark brown. Found under decayed leaves at Cagayan in the province of Misamis, Island of Mindanao.

CYCLOSTOMA STAINFORTHII.

*Cycl. testá tenui, albicante, pyramidalí, carinatá; spirá acuminatí-
usculá, anfractibus quinque ad sex, lateribus subventricosís, ultimo
longè maximo, margine mediano carinato, lineis spiralibus fuscis
quatuor ad sex ornato; suturá subobsoletá; aperturá magná, sub-
orbiculari, latere columellari rectiusculo; peritremate albo, subin-
crassato, reflexo, supra anfractum penultimum subinterrupto, um-
bilico mediocri.* Long. 0·7; lat. 0·8 poll. *Operculum corneum,
tenue, marginibus anfractuum lamellosis, levatiusculis.*

A very elegant species, which I have the pleasure of dedicating to my kind and liberal friend, the Rev. F. J. Stainforth. Mr. Cuming has brought the following varieties:—

a. Shell nearly white, variegated with brown mottlings and from four to six dark brown spiral lines. Found upon the leaves of trees on the island of Ticao.

b. Shell smaller, and altogether paler. Found on leaves of trees on the island of Masbate.

c. Shell of a pale rosy brown colour. On leaves of bushes on the island of Siquijor.

d. Shell of a pale colour, mottled with dark brown. On leaves of bushes in the island of Siquijor.

e. Shell nearly white. From the same locality as c. and d.

f. Shell larger than var. e. and nearly white. On leaves of trees in the island of Panay.

CYCLOSTOMA TUBA.

*Cycl. testá suborbiculari, depressiusculá, tenui, lævi, albicante ru-
fescence-fusco-variegatá et nubeculatá; spirá brevi, subdepressá,
acuminatá, anfractibus quinque, planiusculis, primis carinatis, ul-
timo maximo, rotundato; aperturá maximá, circulari, expansá,
albicante; peritremate albicante, tenui, lato, revoluta, supra an-
fractum penultimum interrupto; umbilico magno.* Alt. 1·5; lat. 2·3 poll.

Hab. sub foliis putridis prope Montem Ophir, Malaccæ.

This species is remarkable for the extent of the reflected lip of the aperture. Mr. Cuming has brought two varieties, differing only in size.

CYCLOSTOMA PHILIPPINARUM.

Sowerby, Species Conchyliorum, Pars 2^{da}, fig. 180 to 183.

*Cycl. testá globoso-conicá, pallidá, fusco-marmoratá, spirá subacumi-
natá, anfractibus quinque subrotundatis, superne longitudinaliter*

sulcatis, ultimo infrà lævigato; aperturâ subrotundâ, peritremate obtuso, reflexo, supernè producto, latere umbilici subsinuato; umbilico parvo. Alt. 0·6; lat. 0·5 poll. Operculum tenue, corneum, læve.

Of this species, which is very variable in size and colouring, the first specimens I met with were brought from Manilla by J. K. Smith, Esq. Mr. Cuming has collected the following varieties, viz.

a. Shell small, light brown, elegantly marbled with dark chestnut-brown. Found in the earth at the roots of plants at Puerto-galero, in the island of Mindoro.

b. Shell rather larger than *a*, of a pale colour, with very slight dark brown mottlings; apex rosy. From Bai, in the isle of Negros.

c. Nearly similar to *b*, but the apex scarcely rosy. Found under decayed leaves at Piddig, in the province of North Ilocos, island of Luçon.

d. Shell larger, with a pale band round the circumference, and a dark one beneath. Found under decayed leaves at Sinait, and in earth at Bolinao.

e. Shell very darkly coloured, size of *d*. On leaves of bushes at Calauang, and on leaves of trees at St. Christoval, in the province of Batangas.

f. Shell smoother and paler than the other varieties; apex blackish. Found on leaves of bushes at Daleguete, island of Zebu.

g. Shell larger than the other varieties, dark brown, with a white and brown articulated band close to the suture, and a nearly white circumferential band. Found on leaves of bushes at the island of Luban.

CYCLOSTOMA ALTUM.

Cycl. testâ acuminato-turritâ, crassiusculâ, fuscâ, lævi, tenuissimè striatâ, apice obtusiusculo, anfractibus 7 ad 8 rotundatis; suturâ distinctâ, tenui; aperturâ circulari, labio subincrassato, reflexo-patente, duplici, margine externo magis, interno minus expanso, intùs canali parvâ ad basin columellarem munito; umbilico medio-ocri extùs carinâ obtusâ marginato; operculo corneo, tenui, multispirali. Long. 1·; lat. 0·3 poll.

Hab. supra truncos arborum in montibus insulæ Negros, Philippinarum.

This species is remarkable for having a double lip, the inner or newer portion of which is not quite so much expanded as the outer. It may be regarded as the first link of affinity, connecting *Cyclostoma* with *Pupina* by the intervention of the next species, *C. Pupini-forme*.

CYCLOSTOMA PUPINIFORME.

Cycl. testâ subcylindrico-turritâ, crassiusculâ, obscurâ, fuscâ, lævi, tenuissimè striatâ, apice subabruptè acuminato, anfractibus senis, rotundatis, suturâ validâ; aperturâ circulari, peritremate discontinuo; labio externo subincrassato, revoluto, flavido, ad basin columellarem canali angustissimâ spirali interrupto; deindè supernè latiori, demùm supra ultimum anfractum leviter expanso, canali

angustâ tenuique inter anfractum ultimum et partem posticam labii positâ; umbilico parvo, carinâ obtusâ marginatâ, hacce carinâ externam partem canalis angustissimæ basis columellaris efformante. Long. 0·7; lat. 0·25.

Hab. supra truncos arborum apud S. Juan provinciæ Cagayan insulæ Luçon, Philippinarum.

This species, which is related to the last and to *Cycl. tortuosum* of Gray, approaches very nearly to the genus *Pupina*, appearing to differ only in having a dull unpolished external surface, while that of *Pupina* is extremely brilliant. It proves the genera *Cyclostoma* and *Pupina* to belong to the same family.

The next communication is from Dr. L. Pfeiffer, and contains the following descriptions of shells belonging to the genera *Helix* and *Bulimus*, also collected by H. Cuming, Esq. in the Philippine Islands.

HELIX ZONIFERA, SOW. *Hel. T. imperforatâ, subglobosâ, tenui, fulvâ, zonis variis opacis lutescenti-albidis ornatâ, obsoletè angulatâ; anfractibus 4 convexis, supremis depressis; columellâ planâ, rectâ, elongatâ; aperturâ lunato-rotundatâ, intus nitidâ; peristomate simplici, expanso, albo, cum callo columellari angulatim juncto.* Diam. 1·60; alt. 1·10 poll.

Hab. ins. Leyte.

β. *T. tenuissimâ, luteo-virente, basi unicolore, ad peripheriam fasciâ latâ nigricante et angustiore albidâ, supernè fasciis pluribus albidis interruptis ornatâ.*

Hab. ins. Leyte.

γ. *T. rufo-nigricante, fasciis variis sordidè albidis.*

Hab. ins. Samar.

δ. *T. crassiusculâ, cinnamomeâ, fasciis lutescenti-albidis.*

Hab. ins. Samar.

Differt ab *H. pulcherrimâ*, cui valdè affinis, spirâ depressâ, anfractu ultimo minus inflato, et columellâ neque excavatâ neque dentatâ.

HELIX NORRISII, SOW. *Hel. T. imperforatâ, globoso-depressâ, solidâ, glabrâ, fulvo-citrinâ, zonis opacis candidis et infra suturam maculis irregularibus albis notatâ; spirâ semiglobosâ; anfractibus 4½ convexis, ultimo ad columellam subexcavato; columellâ latâ, albo-cullosâ, arcuatim prolongatâ; aperturâ ferè orbiculari, intus lacteâ; peristomate crasso, latissimè expanso.*

Diam. 1·80; alt. 1·15 poll.

Hab. insula Luçon, ad Montem Triga.

Species intermedia inter *H. pulcherrimam* et *zoniferam*, ab illâ spirâ depressâ et columellâ arcuatâ, ab alterâ columellâ excavatâ, nec angulatâ diversa.

HELIX LUZONICA, SOW. *Hel. T. imperforatâ, conico-globosâ, crassiusculâ, obliquè striatâ, rufâ, apice sanguineâ, epidermide liberâ ferè omnino tectâ, medio fasciâ latâ albidâ ornato; spirâ conoideâ; anfractibus 5 — 5½ convexiusculis; columellâ obliquâ, dilatatâ, tuberculosâ; aperturâ lunato-orbiculari, intus lacteâ; peristomate incrassato, latè reflexo, albo vel purpureo latè limbatō.*

Diam. 1.60; lat. 1.15 poll.

Hab. Provincia Cagayan insulæ Luçon.

Differt ab *H. pulcherrimâ* testâ crassâ, conoideâ, anfractibus pluribus et sensim accrescentibus, columellâ vix excavatâ et labro incrassato.

HELIX MINDANAENSIS, SOW. *Hel. T. imperforatâ, globoso-conicâ, solidâ, obliquè rugoso-striatâ, apice obtuso, pallidâ, luteo-fuscâ, opacâ, maculis variis rufis pellucidis ornatâ; spirâ conoideâ; anfractibus 4½ convexiusculis, ultimo medio obtusè angulato, infra angulum fasciâ latâ, hydrophanâ, albidâ signato; columellâ lividâ, subrectè descendente, medio subintortâ; aperturâ tetragono-ovatâ, intùs plumbeâ; peristomate subincrassato, parùm reflexo, livido-fusco, margine supero arcuatim dilatato.*

Diam. 2.20; alt. 1.65 poll.

Hab. insula Mindanao.

Forma et magnitudo sicut *H. Pan.* Differt anfractu ultimo angulato, colore et formâ columellæ et aperturæ. Ab *H. Harfordii* differt formâ conicâ, maculis non hydrophanis, sed in ipsâ testâ positis, et margine dextro aperturæ sinuato.

HELIX CARBONARIA, SOW. *Hel. T. imperforatâ, subtrochiformi, lævi, purpureo-nigricante, epidermide fuscâ, hydrophanâ, obliquè strigatâ, apice rubrâ vel violacèâ; suturâ lineari; anfractibus 5 planiusculis, ultimo carinato, basi plano; columellâ subrectâ, dilatatâ, fusciculâ; aperturâ subtetragonâ, intùs lividâ; peristomate simplici, vix incrassato.*

Diam. 1.20; altit. 0.95 poll.

Hab. Insula Zebu. 'Daleguete.'

Variat carinâ obtusiore, basi convexiore.

HELIX (CAROCOLLA) PANAYENSIS, Brod. *Hel. T. imperforatâ, depressâ, orbiculari, carinatâ, crassiusculâ, supernè griseo-fuscâ, minutissimè granulatâ, basi radiatim striatâ, nitidissimâ, olivacèâ; spirâ depresso-conoideâ; anfractibus 6 planulatis, ultimo non deflexo; aperturâ angulato-lunari, intùs albidâ; peristomate supernè simplici, basi incrassato, ad columellam expansiusculo.*

Diam. 1.60; altit. 0.85 poll.

Hab. Insula Panay. 'Dingle.'

Var. (Cagayan ins. Luçon). *Spirâ elatiore, anfractibus ultimis tumidis, supernè saturatè rufa, basi nigricans, deorsum pallescens.*

HELIX MORICANDI, SOW. *Hel. T. umbilicatâ, semiglobosâ, basi planiusculâ, nitidâ, albido-flavâ, fasciis rufis 2-3-cinctâ; anfractibus 5½ convexis, ultimo margine dextro subitò deflexo; umbilico angusto, pervio; aperturâ transversè pyriformi, basi parallelâ; peristomate connexo, margine superiore expanso, basali latè reflexo, ad basin dente unico crasso instructo.*

Diam. 1.35; altit. 0.70 poll.

Hab. Insula Bohol. 'Jacna.'

Differt ab *H. zonali*, Fér., cui persimilis, basi planâ, aperturæ parte supremâ deflexâ, indè horizontali, et marginibus peristomatis junctis.

HELIX SAGITTIFERA, Pfr. an Nanina? *Hel. T. subperforatâ, tenui, pellucidâ, obliquè striatâ et obsoletè rugosâ, fulvâ, maculis seriatis sagittiformibus et ad carinam obsoletam fasciâ unicâ rufâ ornatâ; suturâ impressâ, ad anfractum ultimum subcanaliculatâ; anfractibus $4\frac{1}{2}$ planiusculis, ultimo inflato; aperturâ perobliquâ, lunato-ovatâ, intus lacteâ; peristomate simplici, ad columellam subincrassato, vix reflexo, margine superiore deflexo.*

Diam. 2; altit. 1·10 poll.

Hab. Sinait insulæ Luçon.

Affinis *H. Lamarckianæ*, Lea. Differt formâ minus depressâ, anfractibus spiræ lentè crescentibus, ultimo vix carinato, et colore.

Varietas: testâ distinctè carinatâ, supernè intensè rufâ, infra carinam fasciâ nigricante dilutâ circumdatâ, basi olivaceo-fulvâ, maculis sagittiformibus obsoletis.—Bolinao insulæ Luçon.

HELIX FULVIDA, Pfr. an Nanina? *Hel. T. subperforatâ, subglobosâ, tenui, pellucidâ, pallidè fulvescente, supernè confertissimè et minutissimè granulosâ, basi glabrâ, nitidâ; spirâ elatâ; anfractibus $5\frac{1}{2}$, supremis planis, $1\frac{1}{2}$ ultimis rotundatis; aperturâ lunari; peristomate simplici, margine columellari subincrassato, ad perforationem obsoletam reflexo.*

Diam. 1·25; altit. 0·85 poll.

Hab. Insula Mindanao.

HELIX JANUS, Chemn. xi. 3016. 17.—*Helicella*, Fér. pr. 233.—An Nanina? *Hel. T. sinistrorsâ, perforatâ, orbiculari, tenui, diaphanâ, obliquè regulariter et confertim striatâ, supernè fuscâ, basi convexâ, rufâ, nitidiusculâ; spirâ latè depresso-conoideâ; anfractibus 7 planulatis, ultimo carinato; aperturâ lunari; peristomate tenui, acuto, margine columellari reflexiusculo.*

Diam. 1·30; altit. 0·80 poll.

Hab. in monte Ophir, peninsulæ Malaccanæ.

H. Mackensiana, Saul in Revue Zool. 1841, p. 347, eadem esse videtur.

HELIX PORPHYRIA, Pfr. an Nanina? *Hel. T. perforatâ, depressâ, solidâ, obliquè rugoso-striatâ, rufâ, maculis et strigis creberrimis, flavido-albidis subprominulis marmoratâ, carinatâ, infra carinam rufo-fasciatâ, basi olivaceo-fulvâ, nitidiore; anfractibus $4\frac{1}{2}$ planulatis, regulariter crescentibus, ultimo circa perforationem apertam excavato; aperturâ subrhombèd; peristomate simplici, tenui, margine columellari arcuatim reflexo.*

Diam. 1·80; altit. 1·00 poll.

Hab. Insula Burias.

HELIX SAMARENSIS, Pfr. *Hel. T. umbilicatâ, depresso-conoideâ, tenui, obliquè striatulâ, fulvido-albâ, fasciis rufis ornatâ; basi planulatâ; suturâ lineari; anfractibus $4\frac{1}{2}$ planiusculis, ultimo basi subcarinato; umbilico angusto, pervio; aperturâ horizontali, ellipticâ; peristomate simplici, margine supero expanso, basali latè reflexo, edentulo.*

Diam. 0·90; altit. 0·50 poll.

Hab. Insula Samar.

HELIX BUTLERI, Pfr. *Hel. T. imperforatâ, globosâ, tenui, lævi, apice obtuso albâ; spirâ semiglobosâ; suturâ mediocri; anfractibus 4½ planiusculis, ultimo inflato, pallide lutescente, lineis parvis confertis, crispulis vel interruptis ornatâ; columellâ subrectâ, latâ, profundè intrante; aperturâ rotundato-lunatâ; peristomate simplici, vix expanso.*

Diam. 1.25; altit. 1.00 poll.

Hab. Mountains of the Igorrotes.—Forma affinis *H. versicolori* Bornii.

HELIX BECKIANA, Pfr. *Hel. T. umbilicatâ, orbiculari, tenui, obliquè striatâ, fuscâ, vix nitidulâ; spirâ parùm elatâ; suturâ lineari; anfractibus 6 planiusculis, ultimo deflexo, ad peripheriam angulato; angulo ad aperturam obsoleto; basi planiusculâ; umbilico mediocri, pervio; aperturâ ferè horizontali, subtrapezoidali; peristomate simplici, margine columellari brevi, basali reflexo, quasi in tuberculum incrassato.*

Diam. 0.85; altit. 0.40 poll.—Nueva Ecija.

HELIX CUMINGII, Pfr. *Hel. T. imperforatâ, depressâ, obtusè subcarinatâ, apice violaceo, obtusâ, obliquè striatâ, nigricanti-rufâ, epidermide rufâ, supernè maculis irregularibus, basi fasciis multis stramineo-cinereis ornatâ; anfractibus 4, supremis planiusculis, ultimo subinflato; columellâ rectè descendente, latè callosâ; aperturâ latâ, subquadrangulârî; peristomate latè expanso, margine inferiori incrassato.*

Diam. 1.60; altit. 0.90 poll.

Hab. Insula Zebu.—Affinis *H. Zebuensi*, Brod.

HELIX SCROBICULATA, Pfr. *Hel. T. umbilicatâ, lenticulari, tenui, obliquè rugosâ, fulvido-albidâ, fusco-zonatâ, carinatâ; spirâ parùm elatâ, apice obtuso nitidâ, glabrâ; suturâ lineari; anfractibus 4½ convexiusculis, ultimo deflexo; carinâ subacutâ; umbilico angusto, pervio; aperturâ transversè pyriformi; peristomate simplici, continuo, supernè expanso, basi latè reflexo, unidentato; dente obtuso, extûs scrobiculum formante.*

Diam. 1.15; altit. 0.45 poll.

Hab. Insula Bohol.

Affinis *H. rotæ*, spirâ elatiore, carinâ simplici, subacutâ, et costis deficientibus diversâ.

BULIMUS BREVICULUS, Pfr. *Bul. T. imperforatâ, ovatâ, apice obtuso, obliquè obsoletè striatâ, nitidâ, albâ, epidermide lutescente deciduâ obductâ; anfractibus 6 angustis, convexiusculis; columellâ subrectâ, in laminam tenuem expansâ; aperturâ perobliquâ, transversè semiovali; peristomate simplici, expanso.*

Long. 1.15; diam. 0.75 poll.

Hab. Insula Romblon.

Affinis *Bulimo stabili*, Sow., formâ abbreviatâ, anfractibus convexiusculis et aperturâ diversis.

BULIMUS CUMINGII, Pfr. *Bul. T. imperforatâ, ovatâ, tenuissimâ, obliquè striatulâ, pellucidâ, albido-virente, ad suturam lineâ rufâ*

circumdatâ ; anfractibus $4\frac{1}{2}$ convexiusculis, ultimo obsolete angulato, spiram paulò superante ; columellâ planâ, subexcavatâ, fuscâ ; aperturâ lunato-ovali ; peristomate simplici, margine dextro latè expanso, basali subreflexo.

Long. 1·35 ; diam. 0·95 poll.

Hab. Insula Camiguin.

BULIMUS LIGNARIUS, Pfr. *Bul. T. imperforatâ, conoideo-globosâ, solidâ, obliquè striatâ, subepidermide lignariâ nitide nigricante, sursùm pallescente, apice obtusiusculo, nitide fulvo ; spirâ conoidedâ ; anfractibus 5 convexis, ultimo spirâ paulò breviorè ; columellâ subrectâ, extrorsùm latè expansâ, fusco-plumbed ; aperturâ lunato-ovali, intùs nitide cærulescente ; peristomate simplici, reflexo, saturatè plumbeo, margine dextro valdè arcuato.*

Long. 3·05 ; diam. 2·20 poll.

Hab. Provincia Cagayan insulæ Luçon.

a. Ferè unicolor, epidermide pallidâ, saturatius strigatâ, fasciâ unicâ angustâ, nigrâ suprâ, latiore albidd infrâ medium anfractus ultimi.

β. Epidermide albo-strigatâ, fasciis pluribus angustis nigricantibus, unicâ latiore albidd infrâ medium anfractus ultimi.

γ. Minor, spira subelongata ; color sicut in a.

BULIMUS JUGLANS, Pfr. *Bul. T. imperforatâ, elongato-globosâ, apice obtuso, solidiusculâ, obliquè distinctè striatâ, unicolore, rufâ ; anfractibus 5 convexis, ultimo spiram æquante ; columellâ latâ, albâ, introrsùm arcuatim prominente ; aperturâ magnâ, irregulariter subovali, ad basin columellæ sinuatâ, intùs pallidè lividâ ; peristomate vix reflexo, rufo-marginato.*

Long. 2·20 ; diam. 1·50 poll.

Hab. 'Mountains of Igorrotes.'

BULIMUS NYMPHA, Pfr. (*Achatina* ?) *Bul. T. ovato-turritâ, solidiusculâ, lævi, sulphureâ, epidermide hydrophand, ligned crebrè et latè strigatâ, lined suturali rufâ et areâ columellari nigricante ornatâ ; apice obtuso, nitide roseo ; anfractibus 6 vix convexiusculis, ultimo $\frac{1}{2}$ longitudinis æquante, obsolete angulato ; columellâ rectâ, planâ, vix truncatulâ ; aperturâ magnâ, ovali, intùs albâ ; peristomate subsimplici, albo, margine dextro valdè arcuato.*

Long. 2·00 ; diam. 0·95 poll.

Hab. Insula Luçon, 'San Miguel.'

Var. Testâ rufâ, sursùm pallescente, apice roseo ; epidermide albidâ, peristomate rufo. Mt. Triga.

Differt a *Bulimo* (*Achatina*) *Boholensi* formâ ventricosiore, anfractu ultimo brevi, aperturâ latâ, peristomate non expanso.

July 12.—William Horton Lloyd, Esq., in the Chair.

The following "Descriptions of two new species of *Oniscia*, a genus of pectinibranchiate Mollusks," communicated by Mr. Lovell Reeve, was read.

ONISCIA DENNISONI. *Onisc. testâ trigono-ovatâ, decussatim costatâ, costis tuberculo squamdvæ ad juncturas instructis ; anfractibus su-*

pernè angulatis, superficie albâ, fusco-maculosâ, leviter striatâ; labro columellari rutilo, albo-granuloso, latissimè effuso; labro externo valdè incrassato, internè denticulis albis irregulariter ornato.

Reeve, Conch. Syst., vol. ii. pl. 253. f. 5 and 6.

Hab. ———?

Long. 2; lat. $1\frac{1}{10}$ poll.

In dedicating this very chaste and beautiful shell to its fortunate possessor, J. Dennison, Esq., we memorize the name of a gentleman whose collection is perhaps unequalled in excellency and preservation. The very rare and valuable specimen before us is closely allied to the *Oniscia cancellata* (*Cassidaria cancellata*, Lamarck), so much so indeed that we at first hesitated to consider it a distinct species; the rich and rosy appearance of the columellar lip is, however, remarkable, and as this part of the shell exhibits its chief generic character, may not so decided a variation of it be considered of specific importance?

ONISCIA STROMBIFORMIS. Onisc. testâ trigono-pyriformi, albâ, transversim irregulariter costatâ et nodosâ; anfractibus supernè angulatis, angulis valdè nodosis; labro columellari albo, granuloso, leviter effuso; labro externo denticulato.

Reeve, Conch. Syst., vol. ii. pl. 253. f. 1.

Hab. ———? Mus. Cuming.

Long. $\frac{7}{8}$; lat. $\frac{1}{2}$ poll.

An interesting small species, figured in 'Conch. Syst.' together with the former, and which appears to be very distinct from any hitherto described.

A series of birds' skins, being the remaining portion of the collection presented by Walter Ewer, Esq., part of which was exhibited at the previous meeting, was laid on the table. These birds were collected in the north-western province of the Bengal presidency, in north latitude 29° to 31° , and east longitude 77° to 80° , and are chiefly inhabitants of the plain. Mr. Ewer, however, observes, that there are perhaps also a few from the Himalaya mountains in the collection.

The following is a list of the species:—

Neophron percnopterus, Temm.

Haliaëtus Macei.

—— *Ponticerianus*.

Circaëtus brachydactylus, Vieill.

Aquila Vindhiana, Frankl.

Morphnus cristatellus.

Astur Hyder, Sykes.

Accipiter nisus.

Falco Chicquera, Lath.

Circus rufus, Briss.

—— *pallidus*, Sykes.

Elanus melanopterus, Leach.

Milvus Cheele.

Ketupa Leschenaulti, Less.

Merops Philippinus, Linn.

—— *viridis*, Linn.

Hirundo filifera, Steph.

—— *riparia*? Linn.

Halcyon Smyrnensis, Linn.

Alcedo rudis, Linn.

—— *Bengalensis*.

—— *Graucalus Papuensis*, Cuv.

Collurio erythronotus, Vig.

—— *Lahtora*, Sykes.

Phaenicornis peregrina, Vig.

—— *brevirostris*, Vig.

—— *rubeculoides*, Vig.

Turdus albicollis.

- Turdus pæcilopterus*, Vig.
 — *sularis*, Auct.
 — — ?
Oriolus Galbula.
Malacocercus striatus, Sw.
Hypsipetes psaroides, Vig.
Ixos cafer.
 — *leucotis*, Gould.
Ianthocincla albogularis, Gould.
 — *leucocephala*, Gould.
 — *erythrocephala*, Gould.
Enicurus maculatus, Vig.
Myophonus Temmincki, Vig.
Megalurus palustris, Sykes?
Anthus Chendoola, Frankl.
Pyrhulanda cruciger.
Saxicola bicolor, Sykes.
Phænicura ruticilla, Sw.
Motacilla alba.
Prinia inornata, Sykes.
Timalia hypoleuca, Frankl.
Parus atriceps, Horsf.
Emberiza cristata, Vig.
Pyrgita domestica, Cuv.
Fringilla leuconota, Temm.
Ploceus Philippinus, Cuv.
Sturnus vulgaris, Linn.
Pastor Galla.
Lamprotornis spilopterus, Vig.
Dendrocitta Sinensis, Vig.
 — *vagabunda*, Vig.
Garrulus bispecularis, Vig.
 — *lanceolatus*, Vig.
 — *striatus*, Vig.
Pica erythrorhyncha, Vig.
Nucifraga hemispila, Vig.
Fregilus Graculus, Cuv.
Corvus culminatus, Sykes.
Eudynamys orientalis, V. & H.
Centropus Philippensis, Cuv.
 — *Cirkeer*, Gray.
Palæornis torquatus, Vig.
 — *flavicollaris*, Frankl.
- Picus occipitalis*, Vig.
 — *Mahrattensis*, Lath.
Bucco caniceps, Frankl.
 — *Philippinensis*, Auct.
Yunx Torquilla, Linn.
Sitta castaneoventris, Frankl.
Pomatorhinus erythrogenys, Vig.
Phasianus albocristatus, Vig.
Perdix Chukar, Vig.
Francolinus Pondicerianus.
 — *vulgaris*.
Coturnix Cambaiensis.
Pterocles exustus.
Cursorius Coromandelicus.
Œdicnemus crepitans, Temm.
Vanellus Goensis, Auct.
 — *cristatus*, Meyer.
 — *Keptuschka*, Temm.
Gallinago stenurus.
Tringa pugnax, Linn.
 — *Temmincki*, Leisler.
Totanus glottoides, Vig.
Herodias Gazetta.
Botaurus stellaris, Steph.
Anas pæcilorhyncha, Gmel.
Dafila acuta, Leach.
Mareca Penelope, Selby.
Fuligula rufina, Steph.
 — *cristata*, Steph.
Nyroca leucophthalma, Flem.
Rhynchaspis clypeata, Steph.
Chauliodes strepera, Sw.
Querquedula Crecca.
Tadorna rutila, Steph.
Anser Indicus, Steph.
Mergus albellus, Linn.
 — *merganser*, Linn.
Podiceps minor, Lath.
Sterna aurantia, Gray.
Plotus Levaillanti, Temm.
Phalacrocorax Javanica.
 — *Cormoranus*, Temm.

An abstract of a letter from E. Blyth, Esq., curator to the museum at Calcutta, was then read. It contains the following list of birds, with observations upon them, which are found both in India and Europe:—

- Aquila chrysaëtos*, Vig. Inhabits the mountains.
Falco peregrinus, Gmel. Inhabits the mountains.

Falco Tinnunculus, Linn. Common.

Pernis apivorus, Auct. Moderately common.

Circus rufus, Auct. Moderately common.

— *cyaneus*, Auct. Moderately common.

— *cineraceus*, Auct. Moderately common.

Otus brachyotus, Flem. Not rare.

Strix flammea, Linn. Common.

Hirundo rustica, Linn. Found in the Himalayas.

— *riparia*, Linn. Inhabits the Himalayas.

Saxicola Rubetra, Temm. Not uncommon.

— *rubicola*, Temm. Not uncommon.

Sylvia Hippolais, Lath. Not uncommon.

— *Suecica*, Lath. Not uncommon.

Turdus viscivorus, Linn. Inhabits the Himalayas.

Pyrgita domestica, Auct. Very common.

— *montana*, Auct. Inhabits the Himalayas; is found also at Chusan on the east, and Affghanistan on the west, in both places representing the house-sparrow.

Corvus pica, Linn. Is found, according to report, in Affghanistan. I have seen the true British species from Chusan. There is a distinct but nearly allied species at Bootan, which may also be that of Affghanistan.

Corvus Corax, Linn. Inhabits the mountains, but not the plains; it is there replaced by a smaller species*, often mistaken for the common raven.

Fregilus Graculus, Selby. Abounds in the Himalayas.

Sturnus vulgaris, Linn. Is seen commonly in the bird-shops at Calcutta, being brought from the hills.

Cuculus canorus, Linn. Rare; but the nearly allied species, *Cuculus micropterus* of Gould, is less so.

Yunx Torquilla, Linn. Not rare.

Charadrius minor, Meyer. Very common.

Ædicnemus crepitans, Temm. Inhabits the peninsula of India.

Ardea. All the European species of Heron are to be met with.

Botaurus stellaris, Linn.

Ciconia alba, Ray. Rare.

— *nigra*, Ray. Rare.

Platalea Leucorodia, Linn. Very common.

Ibis Falcinellus, Temm. Very common.

Numenius arquata, Lath. Common; but the *Numenius phæopus* (Lath.) is not found here.

Totanus fuscus, Leisl. Common.

— *calidris*, Bechst. Common.

— *ochropus*, Temm. Not very common.

— *glareola*, Temm. Excessively abundant.

— *hypoleucos*, Temm. Not very common.

Recurvirostra Avocetta, Linn. Not very common.

Himantopus melanopterus, Temm. Very common.

* Mr. Blyth probably alludes to the species to which Col. Sykes gave the name *culminatus*.

Limosa melanura, Leisl. Very common; but the *Limosa rufa* (Briss.) is not found here.

Scolopax Rusticola, Linn. Abounds in the hills.

— *Gallinago*, Linn. Not rare.

— *Gallinula*, Linn. Not rare.

Tringa pugnax, Linn. Common.

— *subarquata*, Temm. Tolerably common.

— *Temmincki*, Leisl. Very common.

— *minuta*, Leisl. Very common.

Phalaropus platyrhynchus, Temm. Rare.

Tadorna rutila, Steph. Common.

— *Bellonii*, Steph. Very rare.

Anas clypeata, Linn. Moderately common.

Chauliodus Strepera, Swains. Moderately common.

Dafila acuta, Linn. Common.

Querquedula circea. Very common.

— *Crecca*. Very common.

Mareca Penelope, Selb. Not common.

Fuligula rufiga, Steph. Very common.

— *Nyroca*, Steph. Very common.

— *cristata*, Steph. Not common.

— *ferina*, Steph. Not common.

GEOLOGICAL SOCIETY.

June 15, 1842.—A communication was made by Dr. Grant, F.G.S., "On the Structure and History of the Mastodontoid Animals of North America."

The chief object of this communication was to point out the structural differences and zoological distinctions of the Mastodons and Tetracaulodons of North America; and the inquiries were instituted in consequence of the favourable opportunity afforded by the temporary exhibition, in this metropolis, of Mr. Koch's large collection of organic remains from the State of Missouri, consisting principally of the relics of these two genera.

After pointing out the important applications of the study of these remains, and the geological relations of Mastodontoid animals, and the discordant opinions of zoologists as to their specific distinctions, Dr. Grant entered into extended details regarding the general structure and the peculiarities of the skeleton in the three principal Mastodontoid genera, Mastodon, Tetracaulodon, and Deinotherium, which are compared with those of the elephant and other allied genera. The fifth section of the memoir is occupied with the description of the development, forms, structure and changes of the dental system of Mastodontoid animals; and each tooth and tusk of the three principal genera are described and compared, and the principal modifications they exhibit according to difference of age, sex, and species. After pointing out the necessity of including the entire series of successive teeth, in the dental formulæ of genera, where the teeth are constantly displacing and succeeding each other through

the whole of life, the author announces the dental formulæ of the four Proboscidian genera of *Pachyderma* to be

$$\text{Elephas, Inc. } \frac{2}{0}, \text{ can. } \frac{0}{0}, \text{ mol. } \frac{8-8}{8-8} = 34.$$

$$\text{Mastodon, Inc. } \frac{2}{0}, \text{ can. } \frac{0}{0}, \text{ mol. } \frac{6-6}{6-6} = 26.$$

$$\text{Tetracaulodon, Inc. } \frac{2}{2}, \text{ can. } \frac{0}{0}, \text{ mol. } \frac{6-6}{6-6} = 28.$$

$$\text{Deinotherium, Inc. } \frac{0}{2}, \text{ can. } \frac{0}{0}, \text{ mol. } \frac{5-5}{5-5} = 22.$$

For the determination of the dental formulæ of *Mastodon* and *Tetracaulodon*, Dr. Grant relied entirely on the splendid collection of jaws, crania, and teeth in Mr. Koch's possession, which afford ample means for the solution of that problem. For the dental formula of *Deinotherium* he has been indebted solely to the casts and fragments of that genus in the British Museum. After explaining the uncertainties and fallacies to which naturalists have been exposed in the identification of species, from not having ascertained the entire dental series in any *Mastodon*, the sixth section of the memoir describes the distinctive characters and the distribution of the *Mastodon angustidens*, *M. latidens*, *M. Elephantoides*, *M. minutum*, *M. Tapiroides*, *M. Andium*, *M. Borsoni*, *M. Humboldtii*, *M. Turicense*, *M. Avernense*, *M. giganteum*, *M. Cuvieri*, and *M. Jeffersoni*. The seventh section of the memoir is devoted to the examination and description of the generic characters of *Tetracaulodon*, as established by Dr. Godman, and as founded on the number and form of the teeth, the peculiarities of their microscopic structure, the form of the jaws, the tusks, the alveoli of the tusks, the intermaxillary fossa, the infra-orbitary foramina, and other influential characters. The eighth and last section of this paper is occupied with an account of the distinctive characters and the distribution of the known species of this genus; viz. *Tetracaulodon Godmani*, *T. Collinsii*, *T. Tapiroides*, *T. Kochii*, *T. Haysii*, and *T. Bucklandi*.

June 29.—“Notice on the Discovery of Insects in the Wealden of the Vale of Aylesbury, Bucks, with some observations on the distribution of these and other Fossils in the Vale of Wardour, Wiltshire.” By the Rev. P. B. Brodie, F.G.S.

In a former notice Mr. Brodie announced the discovery of insects as well as a new genus of Isopods in the Wealden beds of the Vale of Wardour, and in this communication he gives an account of additional localities in the same Vale, where he has found both the insects and crustaceans, and of the strata belonging to the Wealden series, in which he has obtained fossil insects, in the Vale of Aylesbury.

Vale of Wardour.—The precise spot noticed in the former paper is a quarry at Dallards, and the first point to which the author now calls attention, is situated about two miles to the south-east of it. The following section is given of the beds at the new locality, the dip being slightly to the south:—

| | ft. | in. |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|
| 1. Top. Debris of rounded fragments of greensand and Portland stone, with their usual fossils, a few inches thick. | | |
| 2. Chert, full of <i>Cyclas</i> ; it also contains occasionally <i>Bufonites</i> | 1 | 6 |
| 3. Hard, brownish white limestone, with <i>Ostreæ</i> and casts of other shells, some resembling those of <i>Cyclas major</i> . The upper layers much disturbed | 2 | 0 |
| 4. Black earthy clay, a few inches. | | |
| 5. Purbeck stone, varying in character but containing <i>Cyclades</i> | 5 | 0 |
| 6. Fissile, soft stone full of <i>Modiolæ</i> , palates and other remains of fishes, also bones of a species of tortoise | 1 | 0 |
| 7. White limestone, containing <i>Isopods</i> and elytra of <i>Coleoptera</i> | 3 | 0 |
| Hardstone. | | |

In an escarpment in the banks of the adjoining river are two beds of limestone, from the upper of which Mr. Brodie obtained small elytra, and from the lower *Cypris*, and from both carbonized wood, also a species of *Cyclas*. Under these strata is a very oolitic limestone, in which the author found a small *Melanopsis* and a seed-vessel.

A mile distant Mr. Brodie procured from a bed of limestone, about five inches thick, *Cyclades*, *Isopods*, and a small fish of the species which occurs at Dallards; and in a bed of clay, bones of a tortoise. The hard crystalline limestone of the Lady-down beds are noticed as yielding, but rarely, *Cyclades* and *Cyprides*. In the neighbourhood of Tisbury, in a soft, gritty, slightly oolitic stone, the author found *Isopods* of a larger size than elsewhere, likewise an elytron of a coleopterous insect. Though the number of beds of limestone vary in different parts of the Vale of Wardour, yet *Isopods* and insects characterise the whole of them; and as respects lithological characters, notwithstanding the great varieties which occur at different localities, there is throughout the district that general peculiarity of aspect which is so remarkable in freshwater formations of very different ages, and which serves to identify detached quarries with each other.

Vale of Aylesbury.—In Buckinghamshire the Wealden beds possess a certain similarity with those in Wiltshire, but with clearly marked local differences. At Quainton Hill Mr. Brodie could not discover any traces of fishes, insects, or *Isopods*. In a quarry near the village of Stone he obtained the following section :—

1. Rubble, several feet.
2. Hard white stone, no fossils 2 to 3 feet.
3. Greenish stone, with *Cypris*. 2 feet.
4. Black clay, containing bones of a Tortoise 1 foot.
5. White and blue limestone (Pendle), yielding *Modiolæ* in abundance; also a few *Cypris* and *Cyclas*; likewise bones and palates of fishes, coprolites, and, but rarely, remains of insects; fragments of carbonized wood are common; and Mr. Brodie obtained a specimen of *Sphenopteris Mantelli*, and another minute but beautiful species

of Fern. This limestone bears a close resemblance to one of the beds at Dallards.

In his general observations on the fossils from these different localities, the author states, that though he has greatly added to the number and variety of insect-remains since his former communication, yet he has not found any of the larger kinds, almost every specimen requiring a high magnifying power to be seen distinctly. Next to the Coleoptera, the most prevalent orders are the Homoptera and Tricoptera; and Mr. Brodie observes, that this fact accords with the habits of the two latter orders, the first living on plants, remains of which are found abundantly in the Wealden, and the second hovering over the surface of streams. From the fragmentary state of these remains, and from the wings never being expanded in the more nearly perfect specimens, he considers it probable, that they were carried for some distance down the streams which flowed into the Wealden estuaries. A few of the insects which have been examined by an eminent entomologist, have been pronounced to possess, with one exception, a decidedly European character, to differ from those at Aix, and to be less tropical than those found at Stonesfield.

Since the reading of his prior communication, Mr. Brodie has obtained Isopods an inch and a half in length and an inch broad. These crustaceans, so interesting from the analogy to Trilobites, presented by allied genera, are rarely found in single specimens, but in groups, and therefore present this additional agreement with the habits of recent species. The fossils appear to have been deposited tranquilly at the bottom of the water which they inhabited, being always found imbedded with their legs downwards, and they are generally well-preserved. The whole of the freshwater remains of these Wealden beds, including the testacea, afford the natural characters of such deposits by yielding abundance of specimens, but few genera.

Associated with the above-mentioned organic remains of the Vale of Wardour, Mr. Brodie has obtained three species of small fishes quite distinct, he says, from those found at Lady Down and Chicks-grove. With a single exception they were all procured at one spot.

None of the localities mentioned in the paper afforded the least trace of the "dirt-bed," or of Cycadeoidea.

A letter, addressed to the Secretaries by C. Kaye, Esq., "On a Collection of Fossils discovered by the writer in Rocks in Southern India."

The localities from which Mr. Kaye procured his suites of specimens are Pondicherry, Trichinopoly, and Verdachellum.

Pondicherry.—From a limestone in the neighbourhood of this city, Mr. Kaye obtained Nautili in great abundance, belonging to at least three species; Ammonites in even greater numbers and well-preserved, and although assignable to thirteen distinct species, the author has not been able to identify a single specimen with any European Ammonites of which he has seen a description. Baculites likewise occur in such quantities as often to constitute the entire mass of large blocks; and Hamites in a great variety of forms, besides numerous genera of conchifera and mollusca; likewise Echinidæ,

Polyparia, fishes' teeth, and considerable masses of calcareous wood bored by Teredines.

All these fossils were discovered by Mr. Kaye and a friend within the last two years, and are entirely new to European palæontologists.

In the neighbourhood of Pondicherry and bordering on the limestone is a bed of red sand containing an immense quantity of the silicified wood long known to collectors.

Trichinopoly.—The spot in this district from which Mr. Kaye procured his specimens he was not able to visit. The fossils occur also in a limestone, preserve their shelly matter with occasionally the colour, and belong principally to marine genera, but some are considered to be of freshwater origin. Cephalopods appear to be of very rare occurrence, Mr. Kaye having obtained from the locality only one fragment of a large Ammonite. Wood bored by Teredines is also found in the limestone.

Verdachellum.—From a calcareous rock near Verdachellum, forty miles from Pondicherry, Mr. Kaye procured a variety of marine shells, including a considerable number of Ammonites, considered by him to be distinct from those found near Pondicherry; also a few imperfect Nautili and a few Echinidæ, corals, &c.

Among the testacea are several considered to belong to species found in the Trichinopoly deposit, and a few believed by Mr. Kaye to be identifiable with Pondicherry shells. This limestone is likewise bordered by a red sand which contains specimens of silicified wood. The formation was discovered only a short time before the writer quitted India, and he consequently considers his collection as defective; but he regards the deposit whence it was obtained as of interest, affording, by its position and organic contents, a link between the other two localities.

MISCELLANEOUS.

NOTE ON SAXIFRAGA STELLARIS AND S. LEUCANTHEMIFOLIA, LAP.

I HAVE gathered in the Cetzthal in the Tyrol the plant described as *S. leucanthemifolia* (Lap.) by Reichenbach and other German botanists, and am quite of the opinion of Bertoloni (Fl. Ital. iv. 482) that it is only a state of *S. stellaris*, L. The plant in question has the leaves more oblong and dentate nearly to the base, the panicle somewhat more spreading, the bracts (as in *S. stellaris*) for the most part lanceolate, but the lower one sometimes obovate and dentate; the petals are slightly unequal, but this occurs (perhaps always) in *S. stellaris*; the capsule is quite the same, as are the seeds. As the description of the latter in DeCandolle's 'Prodromus' may give rise to mistakes, I may mention that the seeds of *S. stellaris* are oviform-semilunulate (not ovato-subglobose), light brown (scarcely fuscous) with longitudinal striæ, which are beautifully fringed with elevated semitransparent points. In a paper in the 'Ann. Nat. Hist.' ii. 35, I mentioned a variety of *S. stellaris* found on Curslieve in Mayo, which is much more different from the ordinary form; it is much